



NEWSLETTER OF THE LONDON CHAPTER,
ONTARIO ARCHAEOLOGICAL SOCIETY
Grosvenor Lodge, 1017 Western Road, London, ON. N6G 1G5
(519) 645-2844



April, 1993

93-3

The Prehistoric Archaeology of Southeast Ireland

Peter Ramsden
McMaster University

For our last speaker night of the season, we will finish where we started, and return across the ocean, this time to the Emerald Isle. Specifically, Peter Ramsden will talk about the work he has been involved with in the southeast part of Ireland, home places like Kilkenny, Carlow, the Wicklow Mountains, Waterford Crystal, and most importantly, ancestral homeland to at least two very important Ontario archaeologists (says Neal to Peter!). So come on out to our last presentation before the Summer break, an' listen to yer man tell a tale of pre-Celtic times! Meeting time is Thursday, May 13th, at Grosvenor Lodge, starting at 8 PM.

Next: At some point over the summer the Chapter will hold its annual summer picnic. A place and time will be announced in the next issue of **KEWA**.

Chapter Executive

ANNUAL RATES

Individual.....	\$15.00
Family.....	\$18.00
Institutional.....	\$21.00
Subscriber.....	\$17.00

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EXECUTIVE REPORT

The Executive is currently trying to decide how next to proceed with the Prehistory volume. As you know, we are out of print of our first run. A second edition could be made this summer, with little changes to the original (with the exception of typos), in order to take advantage of the orders we keep receiving. Or we could sit on it, build up the demand, clean the volume up in more detail (eg. typos, change or add figures, etc.), and then do a second run in a bout a year's time. Rather than hem and haw, the Executive would like to know what you think: should we move ahead now with what we've got, or spend some time cleaning it up and going to the printer a year from now? Let you nearest member of the Executive know what you think!

On other fronts, the Chapter will be setting up its display during the **Longwoods Road Conservation Area's Heritage Days**, on the weekend of May 1st & 2nd. Various exhibits, and a re-enactment of the War of 1812 Battle of Longwoods (with over 300 Canadian and American re-enactors taking part), will highlight the weekend. Anyone willing to help run the Chapter's exhibit should give Pat a call A.S.A.P.

* * * * * SUMMER FIELD VOLUNTEER OPPORTUNITIES * * * * *

GROSVENOR LODGE SURVEY: Yes, we're picking up where we left off, and will continue to survey the grounds of Grosvenor Lodge. Tom Arnold, flown in from Halifax especially for this purpose (sort of), will again lead the crew. If you have some free hours on the weekend, come on out and dig some holes! Contact Pat Weatherhead for further information.

HAAGSMA SITE EXCAVATION: Dave Riddell is continuing his investigations of the middle reaches of the Sydenham River this year, with excavations at this Late Woodland site being a key part of the project. Work will start in Mid-May and go through much of July. The site is located near Alviston, just a half hour drive west of London. So if you'd like to come out for a day, two, or whatever, please call Dave at 1-847-5731.

--STAY TUNED FOR MORE OPPORTUNITIES IN NEXT MONTH'S ISSUE OF KEWA!--

SOCIAL REPORT

We're still looking for a place to host the summer picnic this year....Any takers? We'd don't want to host it again at Grosvenor Lodge, because that entails getting a liquor permit, etc. Call Pat if you would like to volunteer your place (or someone else's!).

EDITOR'S REPORT

This month we provide you with an article from our London-resident whiz-kid, Jim Wilson, who has been conducting field research in the Komoka-Delaware area west of London, long known to be rich in archaeological remains, but surprisingly subject to very little investigations. Jim provides a tantalizing glimpse of this very important area to the prehistory of southwestern Ontario, and manages to substantially contribute to our understanding of Early Woodland archaeology in the Middle Thames drainage at the same time. All this, and he's actually supposed to be researching the Middle Woodland of this area!!!

THE PRELIMINARY INVESTIGATIONS AT THE POCOCK SITE AND THE MEADOWOOD PHASE ALONG THE MIDDLE THAMES DRAINAGE

Jim Wilson

Introduction

In 1992 I began a program of intensive survey and test excavation along the middle reaches of the Thames River, near Delaware, Ontario. While the primary goal of these investigations was to generate data relating to Middle Woodland settlement and subsistence patterns, our team from McMaster University also documented a series of previously unreported sites, ranging from the Broadpoint Archaic through to the early Late Woodland. In the report which follows I present the results of our preliminary investigations at one of the more interesting new locations, the Pocock site, and contextualize this material within the framework of data now available for the Meadowood Phase within my study area (Figure 1).

The study area covers 18 square kilometres of both riverine and upland environment, although roughly half has been developed, quarried, or is otherwise unsurveyable due to forest cover or present agricultural practices. In terms of its physiography, this area is extremely interesting in that it is centred around the easternmost broad expanse of floodplain on the Thames drainage. When compared to their surrounding uplands, floodplains are often areas of extreme species diversity, and act as a focal point for many pre-agricultural settlement/subsistence systems. East of the study area the Thames cuts through a series of deep glacial spillways, draining till plains and glacial moraines. The gradient on the upper Thames is almost ten feet per mile, compared to the lower Thames where the gradient is two feet per mile (Chapman and Putnam 1984:94). Beginning in the Komoka area, the Thames Valley is more of its own making, cutting its course through the sediments of glacial Lake Warren. At the Thames/Dingman Creek confluence, the valley reaches a width of close to 3.5 kilometres and is incised up to 25 metres below the old lake bed. South of the village of Delaware the valley narrows briefly before broadening again north of the Oneida Reserve.

The Pocock Site

The Pocock site is situated on the western edge of a large sandy terrace, 2.5 metres above the floodplain. While the site is located well away from the modern course of the Thames (see Figure 1), during the period of its occupancy it was situated at the confluence of the Thames and Dingman Creek, the relic channels of which are easily recognizable silt-filled depressions located along the south and west margins of the site (Figure 2).

Upon discovery of the Pocock site a controlled surface collection was conducted, mapping the location of all cultural material, including fire cracked rock (Figure 2). The surface scatter extends for 85 metres north/south and at least 50 metres east/west, although the site continues for an unknown distance in the east under a grass lane and lightly forested area. The most dense distribution of surface material was noted on a slight sandy rise at the southern end of the site,

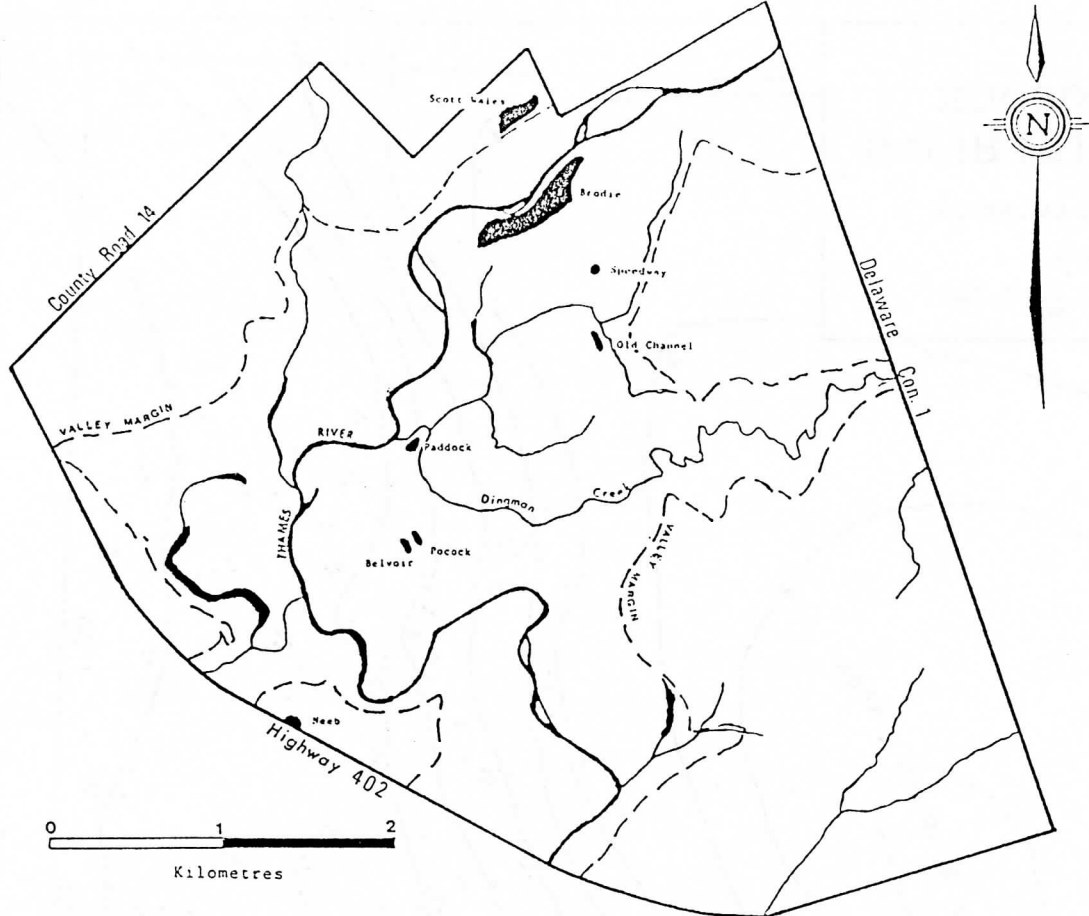


Figure 1: Early Woodland Site Locations Within the Study Area.

immediately adjacent to the relic confluence of the Thames and Dingman Creek. During surface investigations we recovered five projectile points, three bifaces, a drill, one hafted scraper, three small random flake cores, two utilized flakes, 75 pieces of lithic debitage, nine ceramic fragments, one deer tooth, and 443 pieces of fire cracked rock (FCR). Based on these findings we were able to determine that both Middle and Early Woodland periods were well represented, along with a trace of early Late Woodland material. On this basis it was decided to further test the site by excavating a small trench at the southern end of the surface scatter. In total, 25 one meter squares were excavated (Figure 2), with all of the soil screened through 1/4- inch screen. While the goal of the excavation was to generate data pertaining to the Middle Woodland occupation, the testing resulted largely in the production of data related to the Meadowood Phase component.

The Settlement Pattern

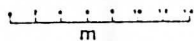
Feature One

Without doubt the most interesting aspect of our investigation was the discovery of two large features (Figure 3). Feature One, the largest of the two, was almost perfectly circular in plan view, measuring 132 cm across and extending 68 cm below the subsoil ploughzone interface (Figure 4). This pit seems to have been subject to at least two periods of use. At its base there

THE POCOCK SITE (Af Hi 134)

• ARTIFACT LOCATION

DATUM 1 SET AT 0 METERS



ABANDONED COURSE OF DINGMAN CREEK

GRASS LANE

TREED AREA

10.25
10.0
9.75
9.50
9.25
9.0
8.75
8.50
8.25
8.0
7.75

ABANDONED COURSE OF THE THAMES RIVER

7.75

Figure 2: Artifact Distribution Map For the Pocock Site (AfHi-134).

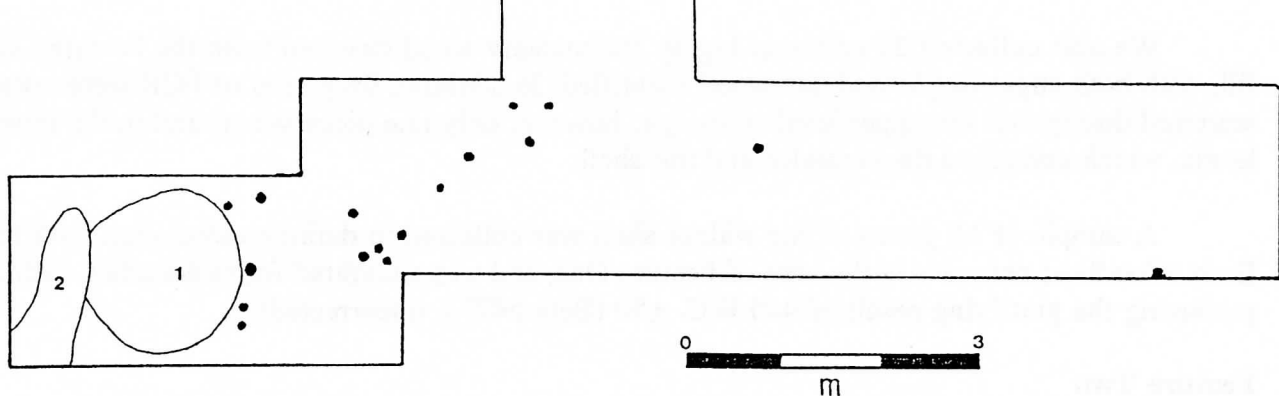


Figure 3: Test Excavation Unit From the Pocock Site.

is a thin, organically rich band of soil, beneath lighter sandy soils deposited due to wall collapse. Immediately above these lighter soils, is a second thin organically rich band. After this second level was deposited, it appears the pit was abandoned, gradually filling in with dark brown topsoil and small pieces of assorted occupational debris. Feature One is of interest because of the ceramic and floral remains recovered from its base. In total we collected 396 grams of interior/exterior cord marked ceramics, 36 grams of carbonized black walnut shell, and three pin cherry pits. In addition, 3.5 grams of green amaranth seed (pig weed) was recovered from the 322 litres of fill retained for flotation. Unfortunately, due to their small size, these seeds were not noted during the excavation of the pit, therefore it can not be said with certainty that they were located in association with the other carbonized material. Three fragments of calcined mammal bone were likewise recovered during the flotation process.

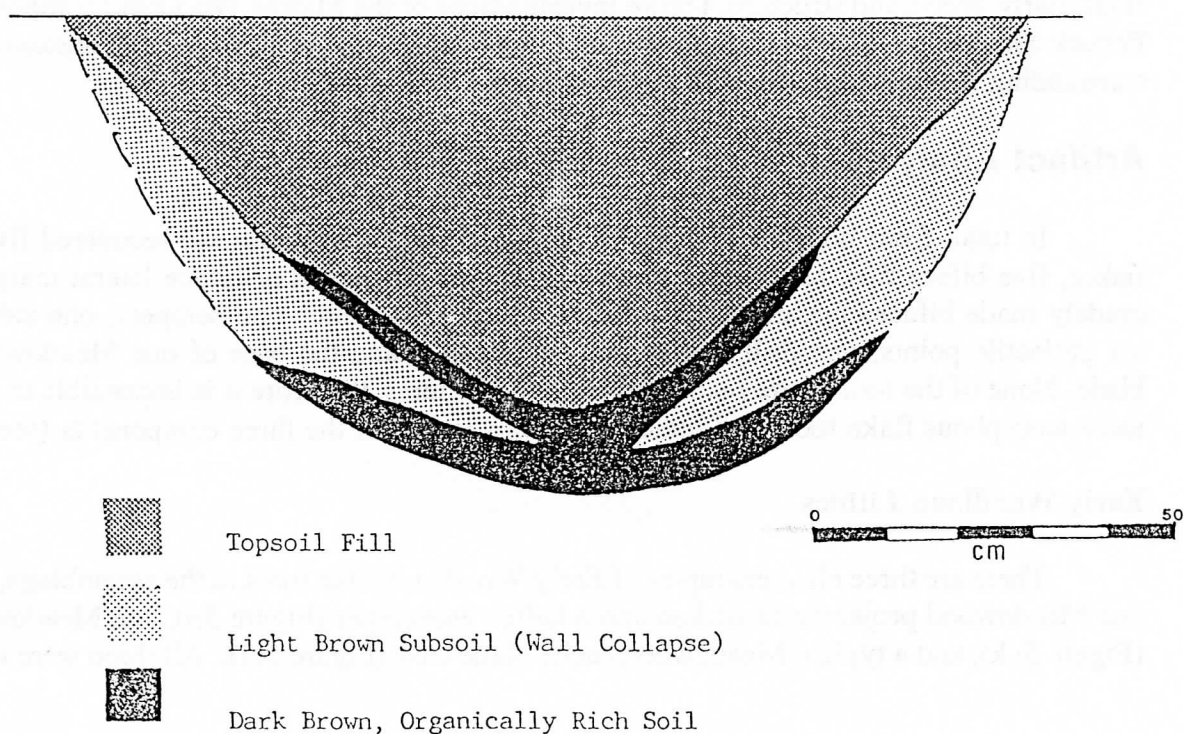


Figure 4: Feature 1 Profile From the Pocock Site.

We also collected 20 grams of highly fragmentary wood charcoal from the Feature One fill, with both sugar maple and basswood identified. In addition, 96 pieces of FCR were noted scattered throughout the upper level of the pit, however only one piece was found in the lower levels, which contained the ceramics and nut shell.

A sample of 15 grams of the walnut shell was collected in definite association with the Early Woodland ceramics at the base of Feature One, and was submitted for radiocarbon dating, producing the gratifying result of 440 B.C. ± 50 (Beta-54735, uncorrected).

Feature Two

Feature Two was located immediately to the southwest of Feature One (Figure 3). It was irregularly shaped in both plan view and profile, and may have been a refuse filled tree fall rather than a deliberately dug pit. It extended 35 cm below the subsoil/ploughzone interface at its deepest point, and its fill consisted of near-black soil, similar to that noted at the base of Feature One. During the flotation of 28 litres of fill we collected 4.1 grams of carbonized walnut shell and 2.5 grams of wood charcoal. In addition we recovered 18 grams of highly fragmentary interior/exterior cordmarked ceramics and 16 pieces of FCR.

Postmolds

During the course of our investigations we also uncovered 19 very distinct postmolds, 17 of which were located in the western end of the trench in apparent association with the two features. The postmolds at the Pocock site are quite large, averaging 11.6 cm wide and 18.4 cm deep. While at this time the possibility cannot be ruled out that they relate to one of the later occupations, I believe there is a greater likelihood that they represent the partial outline of a small Early Woodland structure. Future investigations of the Middle Woodland component at the Pocock Site are anticipated during the 1993 field season, and at that time the unexcavated area surrounding Feature One also will be explored.

Artifact Analysis

In total, from both the surface investigation and excavations, we recovered five utilized flakes, five biface tips, four biface mid-sections, two fragments of biface lateral margins, three crudely made bifaces apparently rejected in manufacture, three end scrapers, one side scraper, six projectile points, one drill, one hafted end scraper, and the base of one Meadowood cache blade. None of the tools were recovered from the features, therefore it is impossible to assign the more amorphous flake tools and biface fragments to one of the three components (see Table 1).

Early Woodland Lithics

There are three clear examples of Early Woodland lithic tools in the assemblage, including one Meadowood projectile reworked into a hafted endscraper (Figure 5:l), one Meadowood drill (Figure 5: k), and a typical Meadowood cache blade base (Figure 5: i). All three were made from

TABLE 1:
Bifacial Tool Metric and Non-Metric Data
(measurements in mm)

Cat #	Length	Max.W.	Thick.	Stem W.	Notch W.	Material	Figure
3	52.9	25.2	7.8	18.2	14.1	Onondaga	5:o
7	43.4	29.8	9.4	29.8	22.9	Selkirk	5:m
92	31.2	22.7	7.2	22.7	15.4	Onondaga	5:n
140	-	24.9	6.8	-	20.4	Unknown	5:j
2	-	20.9	5.0	-	-	Kettle Point	5:p
5	-	20.8	6.8	20.8	15.0	Onondaga	5:k
8	-	25.4	5.8	na	na	Onondaga	5:i
99	18.2	22.2	4.6	-	14.2	Onondaga	5:l
1	21.6	18.2	5.4	na	na	Onondaga	5:f
142	30.6	-	5.9	na	na	Unknown	5:e
78	55.4	20.5	10.4	na	na	Onondaga	5:c
147	61.2	51.0	17.4	na	na	Onondaga	5:b
59	-	-	21.8	na	na	Kettle Point	5:a
130	-	-	-	-	-	Kettle Point	na
137	-	-	-	-	-	Kettle Point	na
113	-	-	-	-	-	Onondaga	na
150	-	-	-	-	-	Onondaga	na
148	-	-	-	-	-	Onondaga	na
24	-	-	-	-	-	Onondaga	na
121	-	-	-	-	-	Onondaga	na
130	-	-	-	-	-	Flint Ridge	na

varieties of Onondaga chert, which in my experience are not found in the local Thames River gravels. This preference for non-local Onondaga material has been previously noted with regard to Meadowood Phase sites in the middle Thames area (eg. Ellis et al 1988:15). This is worthy of note for Pocock, since a gravel bar is located on the extreme southwest corner of the site, in

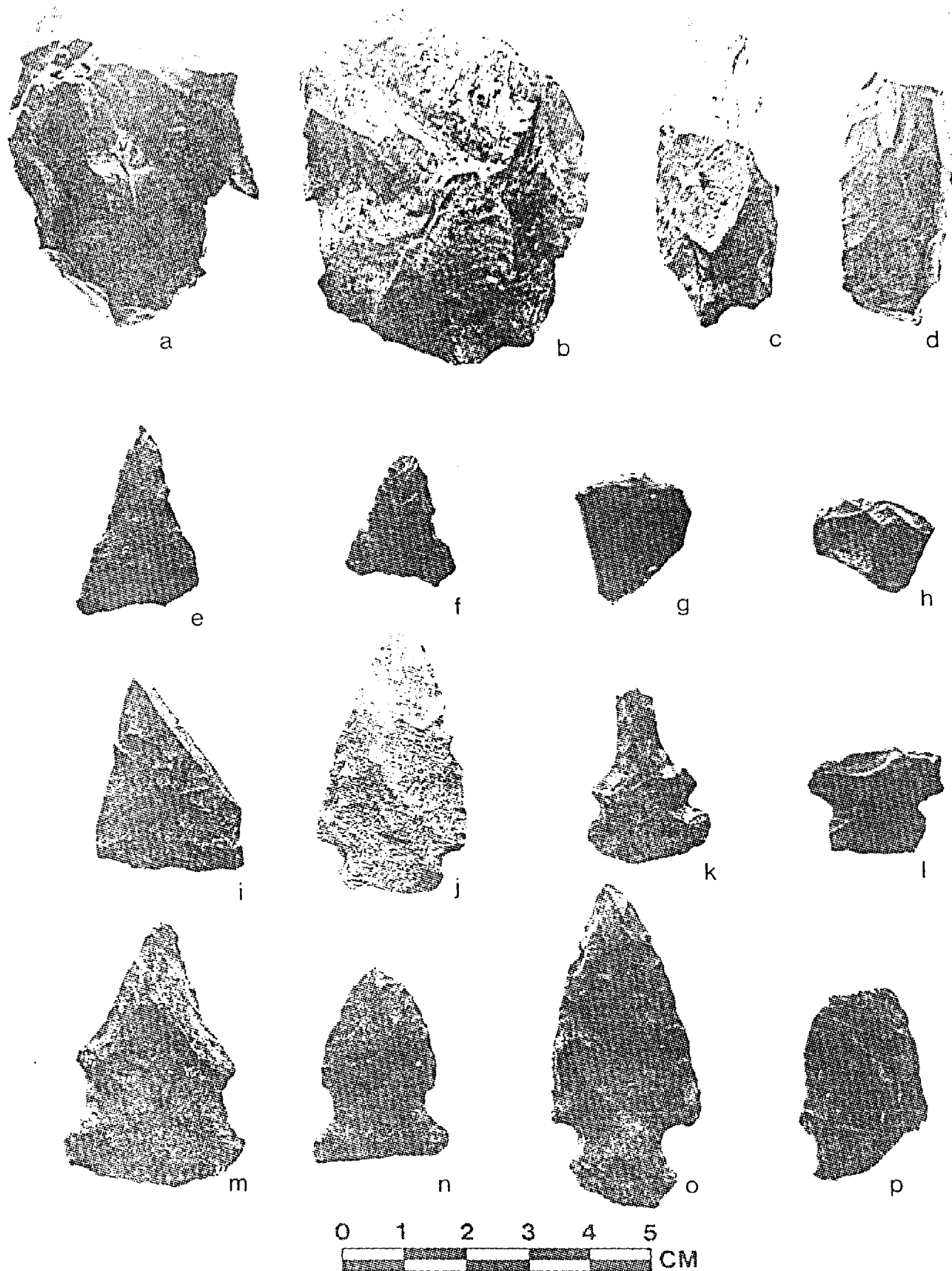


Figure 5: Pocock Site Lithics. a-b: random flake cores; c-d: side scrapers; e-f: Early Late Woodland points; g-h: end scrapers; i: cache blade; j: side-notched point; k: Meadowood drill; l: hafted end scraper; m-p: Middle Woodland points.

which cobbles of secondary source Onondaga are easily located. Chert sources such as this were actively exploited by later Middle Woodland groups (eg. Wilson 1990:60-61).

There is, however, one thin, well manufactured side-notched point (lacking both basal ears) present in the collection (Figure 5:j), which was manufactured from local material. It is possible that this point may relate to the Early Woodland component, as it does not fit easily into the typological sequence for Middle Woodland period projectile points.

Middle Woodland Lithics

There are three examples of Middle Woodland projectile points, all of which were collected from the northern half of the artifact scatter. Two are characterized by wide-side notched openings which tend towards an expanded U form (Figure 5:m-n). The lower notch margins are not clearly defined and extend almost down to the basal ears, giving the points an expanded stem appearance. Both of these projectiles were manufactured from local Onondaga chert, and have been heavily resharpened. Projectiles similar to these were the most common form at the Boresma site (Wilson 1990). The third Middle Woodland point was made from a high quality variety of Onondaga (Figure 5:o). It has what I term an excurvate expanding-stemmed hafting element, a form present, but much less common, at the Boresma site (Wilson 1990).

Early Late Woodland Lithics

Two small Levanna-like triangular points were recovered from the southern end of the site, one from the excavation and one from the surface (Figure 5:e-f). The presence of a small amount of early Late Woodland material at the Pocock site is not surprising, as Riviere au Vase ceramics have been recovered from the Belvoir site located 40 metres to the west across the relic channel of the Dingman creek (see Figure 1), and a Levanna-like drill was observed on another as yet unnamed site located roughly 300 metres further north on this same abandoned channel.

Lithic Debitage

Since the Pocock site is multi-component, the analysis of the lithic debitage is thus severely constrained. Nevertheless, the waste materials have been subjected to analysis following the classification scheme established by Lennox (1986). The results of this study are presented in Table 2. All chert identifications were accomplished macroscopically with reference to materials located at the Ministry of Culture, Tourism and Recreation office in London, and with additional cobble materials collected from the gravels along the southern end of the Pocock site.

All stages of reduction - with the exception of "shatter" - are well represented in both the surface and excavated assemblages. It should also be noted that 22 micro-flakes (flakes measuring less than 4 mm) were recovered from the heavy fraction of the Feature Two float, while 93 were present in the Feature One heavy fraction. In addition, three random flake cores of local Onondaga chert were recovered from the site, two of which came from the surface. One small random-flake Kettle Point core was also recovered from the excavation area.

TABLE 2:
Lithic Debitage Analysis

	Onondaga		Selkirk		Unknown		Total	
	#	gr.	#	gr.	#	gr.	#	gr.
Primary flakes w/ cortex	14	32.1	2	3.6	-	-	16	35.7
P. flakes without cortex	32	31.4	34	40.5	16	16.3	82	88.2
Shatter	1	1.3	-	-	-	-	1	2.3
Biface thinning flakes	18	11.0	19	10.6	3	1.0	41	22.6
Broken flakes	17	6.3	20	8.0	18	4.7	55	19.0
TOTAL	82	83.1	75	62.7	37	22.0	194	167.8
PERCENT OF TOTAL	42.3	49.5	38.7	37.4	19.1	13.1	100	100

Ground Stone

The mid-section of a single, straight-sided ground stone object, rectangular in cross-section and manufactured from a fine grained, light green metamorphic material was recovered from the excavation area. It measured 36 mm in width and was 21 mm thick, and may well be part of a small adze or possibly even a whetstone.

Early Woodland Ceramics

Four fragments of Early Woodland ceramics were found during the surface collection, all of which were located within one meter of each other, 40 metres north of the excavation area. These fragments have interior and exterior cord marking, although it is noticeably coarser on the interior. Two sherds exhibit coil breaks and all sherds appear to come from the same vessel. On average these sherds are 13 mm thick and are extremely friable and poorly fired.

Except for the few unanalyzable fragments from Feature Two, the Early Woodland ceramics were recovered from the base of Feature One, where the two lower levels come together in the centre of the pit (Figures 4, 6). Although no rim sherds were found, on the basis of differences in construction it appears that at least two vessels are represented. The first is a coil constructed Vinette 1-like interior/exterior cordmarked container. There are no indications of lugs or other appendages as are commonly noted on Early Woodland vessels in Michigan and Ohio (Ozker 1982), nor are there flat sherds, suggesting the vessel probably had a conoidal base. The remains of this vessel are extremely friable and poorly fired, although many fragments are encrusted with a carbon-based residue on their interior surface.

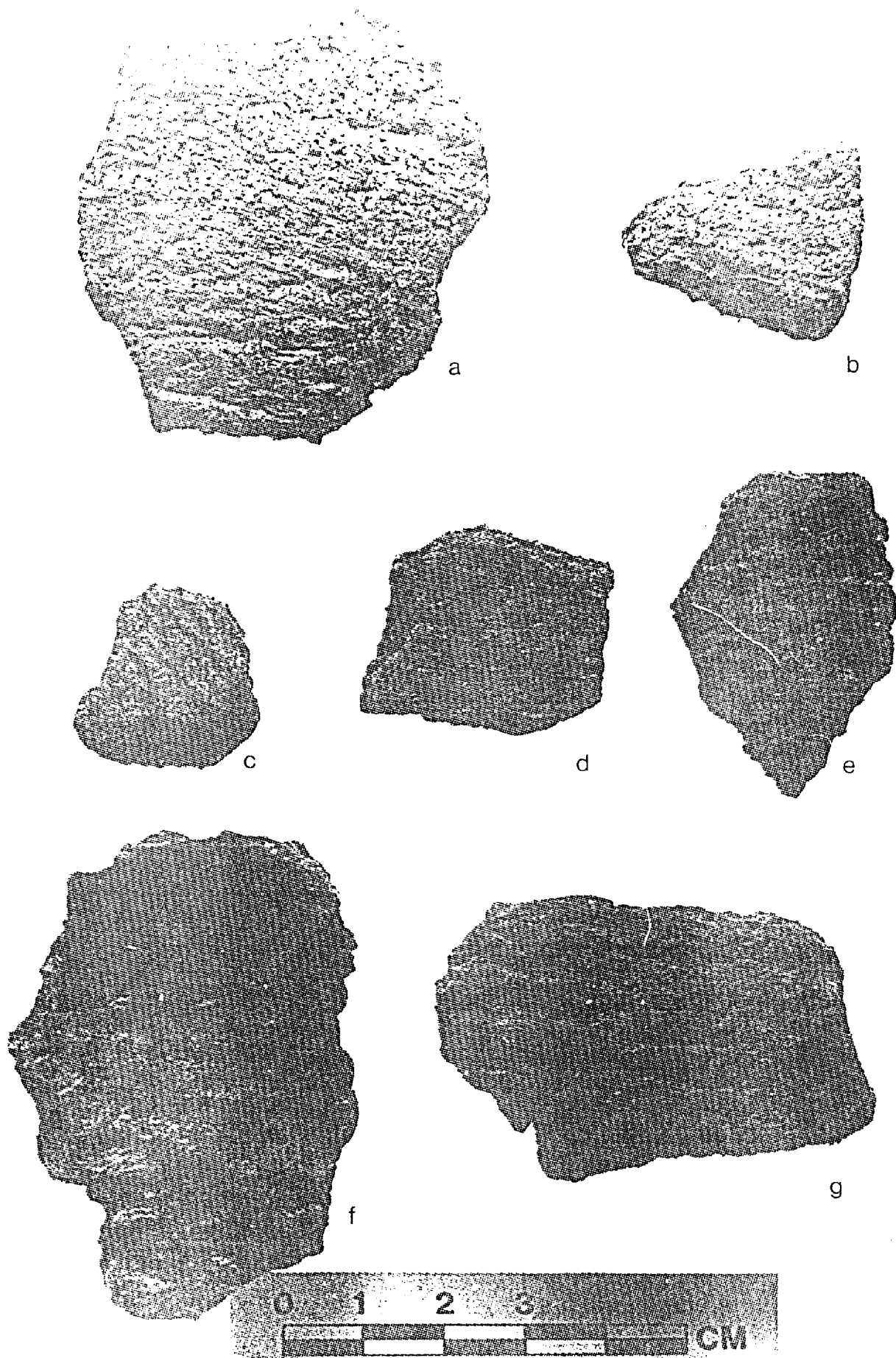


Figure 6: Pocock Site Ceramics. a-c: Pinery Ware, exterior; d: Pinery Ware, interior; e-f: Vinette, interior; g: Vinette, exterior.

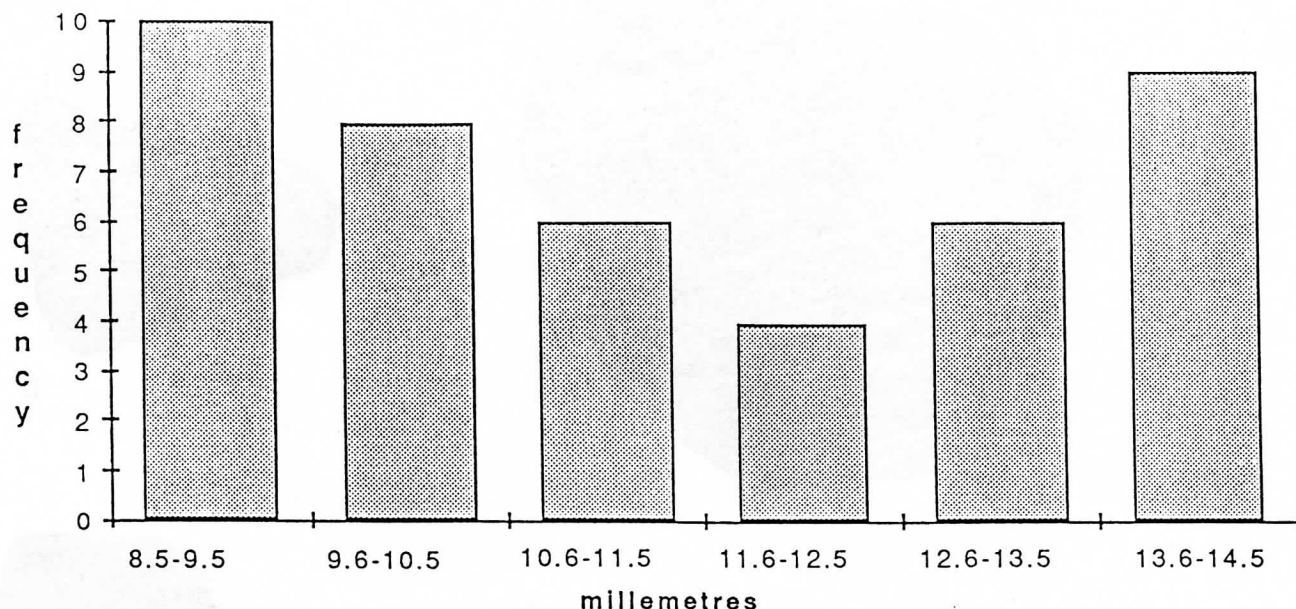


Figure 7: Early Woodland Body Sherd Thickness Graph.

The second vessel sherds were interspersed with the remains of the first. They are much thinner and better fired, and have somewhat finer cordmarking on both their interior and exterior surfaces. This vessel was also manufactured using the coiling technique, although in terms of paste and temper it is similar to a nicely constructed Middle Woodland vessel. Ceramics meeting this description have been recovered from the nearby Neeb site (Spence and Fox 1986:19), and have been termed "Pinery Ware", after the area in which they were first reported (Kenyon 1980). Pinery Ware is considered to be a late variant of Vinette 1, transitional to the tool impressed ceramics associated with the Middle Woodland period (Spence, Pihl and Murphy 1990:137). This conclusion seems consistent with the date of 440 B.C. ± 50 from Feature One, the latest date yet obtained for an Early Woodland site in southwestern Ontario. Figure 7 presents the body sherd thicknesses for all Feature One ceramics, illustrating a rough bimodal distribution which parallels the division between the classic Vinette 1 sherds and the Pinery Ware.

It is interesting to note that two otherwise typical Middle Woodland vessels with interior cording were recovered from the lowest level of the Boresma site midden, which has been dated to 180 B.C. ± 130 (Wilson 1990:84). This seems suggestive of a continuum between Early Woodland and Middle Woodland ceramic technologies along the middle Thames drainage.

Middle Woodland Ceramics

Three pieces of Middle Woodland ceramics were recovered from the surface of the site, including a rocker dentate stamped sherd, a straight dentate stamped sherd, and a cord marked sherd which exhibits a clear coil break. A further two pieces of Middle Woodland ceramics were encountered in the upper fill of Feature One. One of these sherds is undecorated, while the second is decorated with straight dentate stamping. All five of these sherds are similar in both colour and temper size to the ceramics described from the nearby Boresma site (Wilson 1990).

Interpretations

Although only a small area of the Pocock site was excavated, these investigations provide a valuable window into the nature of Early Woodland adaptations along the middle Thames. The Neeb site is the only other Early Woodland site in this area to have been subject to excavation, and this material has been only partially reported (Spence and Fox 1986:19-20). Moreover, the 440 B.C. +/-50 date from Pocock Feature One is the first such Early Woodland radiocarbon assay for the entire Thames drainage.

Because so few Early Woodland sites have been excavated in southwestern Ontario, any conclusions concerning settlement and subsistence patterns are necessarily speculative. A first attempt was offered by Spence and Fox (1986:30), who suggested that:

(t)he geographic concentrations of Early Woodland finds suggest that spring and summer netting of spawning fish in marshy bays and estuaries may have been an important subsistence activity. It is most likely that the ethnohistorically documented Algonkian pattern of winter dispersal of family groups to interior hunting territories was practiced. Similar to preceding Archaic and subsequent Middle Woodland populations, the winter camps were probably situated adjacent to swamps which provided attractive yarding areas for deer. Plant-food gathering has been documented for the fall, but undoubtedly also included a wide range of berries and greens over the summer and perhaps maple sap collection in the spring.

Elsewhere I have argued against the extension of the Algonquian ethnographic analogy to the Middle Woodland groups occupying the middle Thames area (Wilson 1990, 1991), and I believe its utility may be equally suspect with regard to the Early Woodland period. While the Spence/Fox model may eventually prove an accurate depiction of Early Woodland settlement-subsistence patterns for some parts of southwestern Ontario, it seems unlikely that all groups in this environmentally diverse macro-region followed similar seasonal rounds. Models constructed using data from summer occupations located near the Lake Huron shore, mortuary data from the Norfolk Sand Plain, fall nut harvesting stations along the Thames, etc, have the virtue of providing an initial approximation of subsistence strategies. However, where possible, detailed examinations of smaller geographic areas and site locations which might reasonably be expected to relate to activities conducted within a single locality should prove a more useful base for wider, comparative studies.

Ellis et al (1988) have presented a second model for Early Woodland settlement patterns in southwestern Ontario. They suggest that large upland sites such as Welke-Tonkonoh, Glen Oak, and Lambert, all located on the Caradoc Sand Plain west of the study area, may represent the functional equivalents of the Scaccia and Riverhaven #2 sites from upper New York State. These New York sites, on the basis of their rich midden deposits, feature and post clusters, have been interpreted by Granger (1978) as winter base camps. While only surface investigations have been conducted at Glen Oak and Lambert, and the excavations undertaken at Welke-Tonkonoh were limited to small scale testing, Ellis et al believe, in terms of size (0.25-0.9 ha), surface

density and diversity of artifacts, along with the demonstrated presence of postmolds and feature clusters at Welke-Tonkonoh, that these sites may prove comparable to Granger's basecamps.

Certainly the Ellis et al hypothesis is intriguing, however it has recently been called into question by Dodd et al (1989). Based on salvage excavations at Willow (.5 ha), Hamet (.25 ha) and Cushman (.25 ha), all of which are located on the Caradoc Sand Plain in environmental contexts similar to Glen Oak, Lambert and Welke-Tonkonoh, Dodd et al conclude that it is unlikely that these sites represent winter base camps. While extensive excavation was limited to the Willow site, no evidence was encountered of either dense feature clusters or midden areas. Moreover, the detailed surface mapping of the Lambert site resulted in the delineation of six separate loci (the largest being 0.1 ha), several of which clearly relate to earlier and later components. Given this new evidence, it is difficult not to agree with Timmins (1992:16), who suggests "the question of basecamp seasonality [in Ontario] will not be resolved until more data are available." However, at this point I believe it is fair to go somewhat further and suggest even the presence of basecamps, regardless of their seasonality, remains to be demonstrated.

With specific regard to the Early Woodland occupations of the middle Thames area, I believe a good first step may be to set aside the summer lakeshore/winter inland organizational scheme which is so pervasive in the literature dealing with Woodland hunter-gatherer adaptations in southwestern Ontario, with a model based on a riverine/upland dichotomy. While my survey of the Thames River Valley in the Delaware area will not be complete until the coming field season, it is still possible to present a number of observations about the nature of Early Woodland settlement patterns. In the following section of the paper I identify four possible Early Woodland site categories. With the exception of the limited excavated materials available from the Pocock site, statements concerning the seasonality of these occupations remains a long term goal requiring an extensive program of excavation.

Floodplain Sites

Within the study area there are three Meadowood sites situated directly on the Thames River meander belt, including Belvoir, Old Channel, and a large part of Brodie (see Figure 1). The Brodie site is by far the largest in the study area, with artifacts being recovered from an area covering close to 50 acres. Besides Meadowood, this site also has significant Late Archaic (Fisher 1987) and Middle Woodland components (Finlayson 1977; Wilson 1990). Meadowood materials have been recovered from a wide area, although the distribution of surface materials suggests a series of loci rather than a continuous scatter. My own observations suggest that there have been at least two major changes in course of the Thames River effecting the site area, and it seems likely that detailed surface mapping could help to sort out some of the horizontal stratigraphy. Ellis et al (1988) have analyzed available surface materials from Brodie in terms of three loci, however these are arbitrary units, determined by the course of modern roads crossing the site area, rather than by the limits of actual artifact scatters. Nevertheless, the Brodie site has produced numerous Meadowood forms, including projectiles, end scrapers, side notched and T-based drills, perforators, cache blades, three birdstones, and gorgets (Ellis et al 1988:6).

The Belvoir and Old Channel sites are even more poorly known than Brodie. The Belvoir site lies forty metres to the west of Pocock, across the abandoned channel of Dingman Creek. The site covers an area of .4 hectares, and is situated on a low rise, .75 metres above the old Thames channel. Early Woodland artifacts were collected from the entire length of the site, although both Middle Woodland and Early Late Woodland materials are present on the southern half of the occupation. Testing of this site demonstrated the potential for intact cultural deposits protected beneath a silt cap, and a rare complete example of a Meadowood perforator was recovered (Figure 8:k). Surface recoveries of Meadowood artifacts include one heavily reworked projectile and two projectile bases (Figure 8:h-j), one of which has had its proximal end retouched to form a spoke-shave (Figure 8:h). All four Meadowood diagnostics from the Belvoir site were manufactured from non-local varieties of Onondaga chert.

The Old Channel site was located at the very end of our survey season, and regrettably crop conditions precluded the possibility of conducting a controlled surface collection. As its name suggests, the site is located on a very low rise adjacent to an abandoned channel. The artifact scatter covers an area of at least .4- hectares, and one Meadowood tip scraper and the base of a side-notched point were noted, but not curated.

Terrace Sites

The Pocock, Paddock, and Speedway sites, as well as the easternmost portion of the Brodie site, are located immediately adjacent to an abandoned channel of the Thames, but are situated at least 2.5 metres above the meander belt on well drained, sandy loam soils. Whether or not these sites are functionally or seasonally distinct from the floodplain occupations is currently unknown, however this seems to be a logical possibility.

The Paddock site is near the present confluence of the Thames and Dingman, although it was likely oriented to an abandoned channel of the Thames currently occupied by the lower stretch of Dingman. Surface materials cover an area of .5 ha and is similar in density to the Pocock site. Surface recoveries include a Meadowood point which had one basal ear retouched to form a graver (Figure 8:b), as well as two other untyped, but seemingly earlier points.

The Speedway site is located in the northeast corner of the study area on the eastern bank of the same abandoned channel which bisects the Brodie occupation and flowed past the Old Channel site. The surface scatter at this site covers only .25 ha, but is far richer in FCR than either Pocock or Paddock. A double-notched Early Woodland projectile of Onondaga chert was collected (Figure 8:a), along with the mid-section of a thin, well made Adena-like point made from Kettle Point chert. Two small fragments of crudely manufactured ceramics were also noted on the surface, but could not be identified with certainty to an Early Woodland origin.

To date, the Pocock site is the only Early Woodland occupation in the study area with anything better than circumstantial evidence regarding seasonality. Both walnuts and pigweed are fall ripeners, although the nuts may have been stored. The only evidence for occupation during other seasons comes from the three pin cherry seeds, which usually ripen in early July.

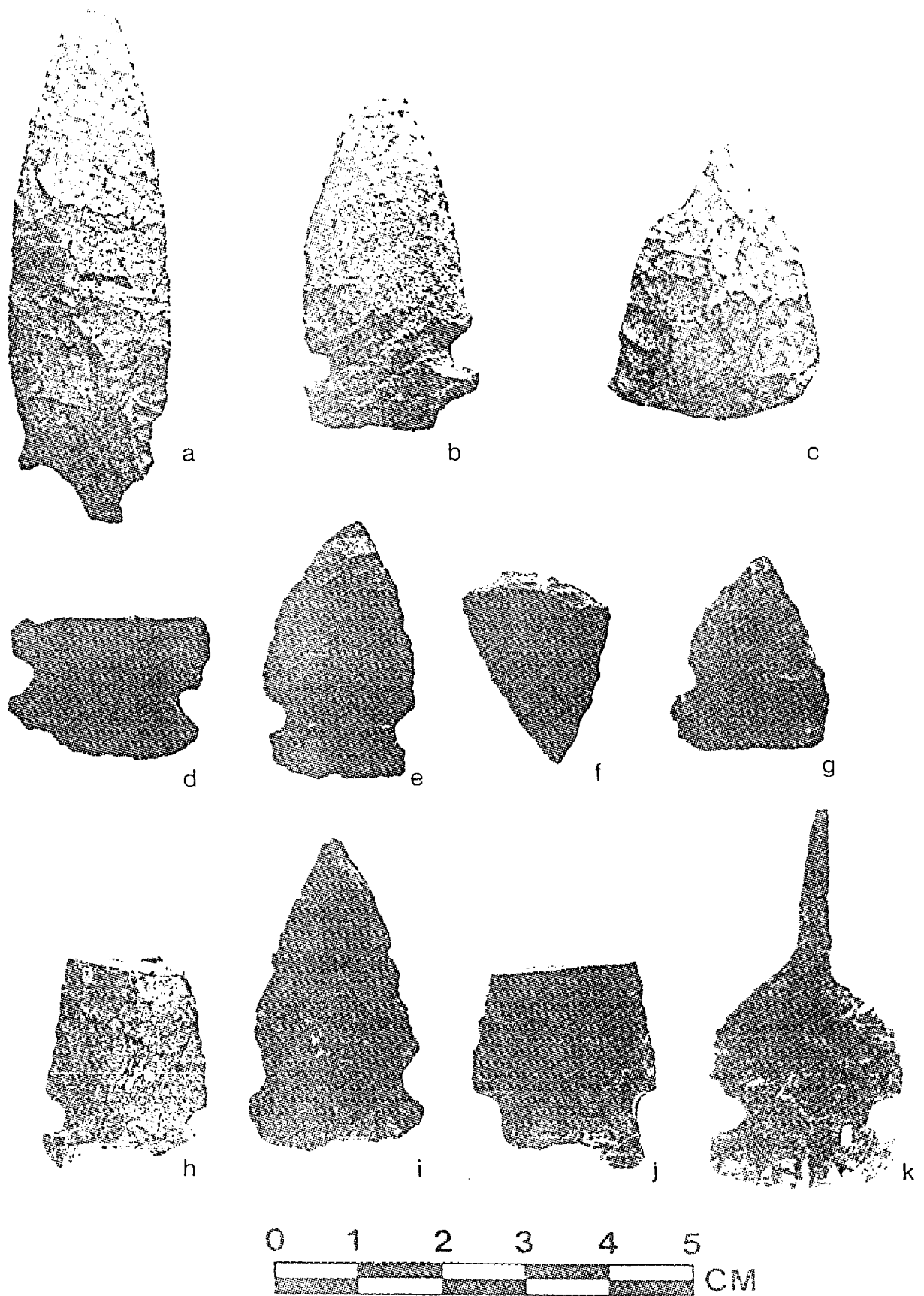


Figure 8: Meadowood Lithics From Early Woodland Sites in the Study Area. a: Speedway; b: Paddock; c-g: Scott Wales; h-k: Belvoir.

In both features at the Pocock site the walnut shell was highly fragmentary, suggesting deliberate crushing in order to aid the recovery of nut oil by boiling. As Garland et al (1990:199) point out, "the removal of nut meats from the shell is not facilitated by wholesale smashing of nuts." This argues against the possibility that the nuts were stored for later consumption of their meat. Ozker (1982:77) has suggested that the large thick-walled, Early Woodland vessels may have played a crucial role in nut oil processing, and the recovery of both nut fragments and ceramics in direct association in both Pocock features seems consistent with her assessment. However, as Spence and Fox (1986:39) have noted, Early Woodland ceramics were not recovered at the Morpeth South site, although 96 grams of highly fragmentary hickory and black walnut shell were collected from one feature, and lesser amounts of nut shell were noted in two other pits (Spence and Fox 1986:19). Spence and Fox (1986:39) also argue that the recovery of Vinette 1 and Pinery Ware ceramics from sites located within the limits of the Canadian Biotic Province where "nut-bearing trees are rare to nonexistent," is also problematic if it is to be maintained that Early Woodland ceramics were used exclusively for nut oil processing.

Garland et al (1990:199-200) have also suggested that ceramics were not essential for the processing of nut oil, as they have identified significant quantities of highly fragmentary nut remains from preceramic contexts along the Lower St. Joseph River in Berrian County, Michigan. While this once again indicates the relationship between ceramic technology and nut oil processing may not have been as crucial as suggested by Ozker (1982), it still seems likely that ceramic technology could have significantly increased the efficiency of nut oil extraction, which may account for the often noted association of these early ceramics and nut shell fragments.

Pocock Feature One is also suggestive in terms of the seasonality of the site. Similar large, deep features, which lack evidence of *in situ* burning, have so far only been located on Early Woodland sites interpreted as fall and/or winter occupations, including Boyd Lakefront (Spence and Fox 1986:20-21), Dawson Creek (Jackson 1986), Scaccia (Funk 1973; Granger 1978), and Riverhaven #2 (Granger 1978). Similarly, the pattern of posts at the Pocock site, indicating the possibility of a small structure in association with the features is also consistent with a fall or perhaps cold weather occupation.

The Pocock site is differentiated from sites such as Scaccia and Riverhaven #2, interpreted by Granger as winter base camps, in that there is no evidence for dense midden deposits, however, at .4- ha, it is comparable in size. It could certainly be argued that because the sandy, well-drained soils at the Pocock site are not conducive to the preservation of faunal materials, some of the apparent differences in recovery rates between this site and Scaccia or Riverhaven #2 may be spurious. Similarly, that evidence for large-scale production of bifaces and the concomitant volume of lithic waste are not present at the Pocock site may have more to do with the site's location well away from the preferred primary outcrops of Onondaga chert than it does with an assessment of whether or not the Pocock site represents a winter basecamp.

Nevertheless, I believe it too early to suggest that Pocock or other terrace sites represent "winter basecamps", at least in the sense that Granger employs the term. The limited data now available suggest occupation primarily during the fall, which may have possibly extended into

the winter months. It seems likely that given the Pocock site's strategic location at the confluence of the Thames and Dingman Creek, it was subject to brief periods of logistic utilization during other seasons as well, which may account for the presence of the pin cherry pits in Feature One.

Bluff Top Sites

The Scott Wales site is a very important but poorly understood multi-component occupation located along the northern bluff of the valley immediately north of the Brodie site. This site has been known to local collectors for decades, however our surface collection of the cultivated half of the site last summer comprises the only systematic work yet conducted there. While it will be necessary to conduct further surface survey, it can be conservatively estimated that this site covers at least 2.5 ha. This site is known to have produced one unfinished and four finished birdstones, as well as a cache of Meadowood T-based drills (C. Ellis, pers. comm.). Our work resulted in the recovery of one heavily reworked Meadowood point (Figure 8:e), while the collection of Mr. Scott Wales contained two examples of Meadowood points (Figure 8:d, g). Mr. Wales' collection also included one Meadowood Cache Blade reworked into a perforator (Figure 8:c) and one example of a Meadowood tip scraper (Figure 8:f). In comparison with valley floor sites such as Pocock or Belvoir, lithic waste flakes and fire cracked rock are extremely numerous.

Just to the east of the study area, and also along the northern bluff of the valley, lies the Wishing Well site. Regrettably, very little is known about this location, as it was destroyed by gravel quarrying activities during the 1950's. Reputedly the site extended over a large area, with local collectors reporting Late Archaic as well as Early Woodland materials (Wolf and Lennox 1974). Unpublished notes recorded by W.W. Jury, who surface collected and conducted test excavations at the site in the 1920's, indicate that at least 1 finished and 6 unfinished birdstones were recovered from a 400 square foot area along the bluff margin (Pearce 1983). Late Woodland materials were also reported from the site.

Further work will be needed in order to understand the place of these large bluff top sites in the local Meadowood settlement-subsistence round, although two general observations are now possible. First, the Scott Wales and Wishing Well sites are located along the valley margin where it articulates with the Caradoc Sand Plain. There are no such sites located along the eastern or southern valley perimeter where soils tend to be heavier and the associated forests would have been dominated by maple and beech. On this basis it seems reasonable to conclude that access to the resources commonly associated with the oak dominated forests of the sand plain, such as nuts and deer, were key elements in the location of these sites. Second, the surface collection from the Scott Wales site suggests that it was abandoned sometime late in the Early Woodland period. Adena and Kramer points are commonly located at Scott Wales, but there is no evidence to suggest occupation continued into the Middle Woodland period. Similarly, there is also no reference to Middle Woodland materials being collected at the Wishing Well site. This apparent discontinuation of bluff top settlement is one of the key points of contrast between the Early Woodland and Middle Woodland on the Middle Thames, along with the appearance of large, extremely rich valley bottom sites such as Boresma during the Middle Woodland.

With the exception of the work conducted at the Scott Wales site, our survey work in the surrounding uplands has been limited to cursory inspections of likely site locations. While several occupational scatters have been noted adjacent to small drainages such as Komoka Creek, further work is needed to determine if they have Early Woodland components.

Excluding the bluff top sites, the Neeb site is the only certain Meadowood upland occupation known within the study area. The site is situated on a low knoll on the Caradoc Sand Plain roughly 300 metres from the valley margin, and was subject to salvage work in 1979 in advance of the construction of Highway 402. This work has been briefly reported by Spence and Fox (1986:19-20), and what follows is summarized from their work.

Both Early Woodland and early Late Woodland components were present, with at least four pit features being attributable to the Early Woodland occupation. The ceramics from the site meet the description of Pinery Ware. Lithic debitage from the features suggest resharpening activity as well as the reduction of biface blanks. Insufficient wood charcoal was recovered for a radiocarbon date, and only a few fragments of pine charcoal could be identified. Carbonized nut fragments were recovered from the features relating to the early Late Woodland component, as well as calcined fragments of white-tailed deer and grey squirrel bone. Given the site's location in an upland nut-bearing forest, Spence and Fox believe it is likely that the Early Woodland component may also relate to fall nut-processing and deer procurement activities.

More work is necessary in the upland environment, both on the Caradoc Sand Plain and on the clay plain which lies to the south and east, before any firm conclusions can be drawn concerning a distinct "upland" site type. Future research will almost certainly result in revisions to this category, with the possibility existing that a wide range of upland utilization patterns being identified.

Conclusions

Our understanding of the Early Woodland period in the middle Thames area, as well as throughout the remainder of the province, is still in a very formative stage. I have attempted to summarize those data relating to the Meadowood Phase which have accrued during my ongoing research of the Middle Woodland occupations in the Delaware area. While the 25 square metres of excavation at the Pocock site provides a welcome glimpse into the nature of Early Woodland adaptations, the surface survey data are equally suggestive, and will provide a good starting point for further research. Whether or not the four site categories which I have suggested prove to be a useful framework remains to be seen, however it seems likely that the pattern of Early Woodland resource exploitation in this area will be eventually proven to be much more complex than has been previously anticipated. At this point the only certain conclusion is that further investigation, including extensive excavation, is needed before it is possible to draw firm conclusions concerning the nature of Early Woodland group movements and possible patterns of seasonal population amalgamation and fission.

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